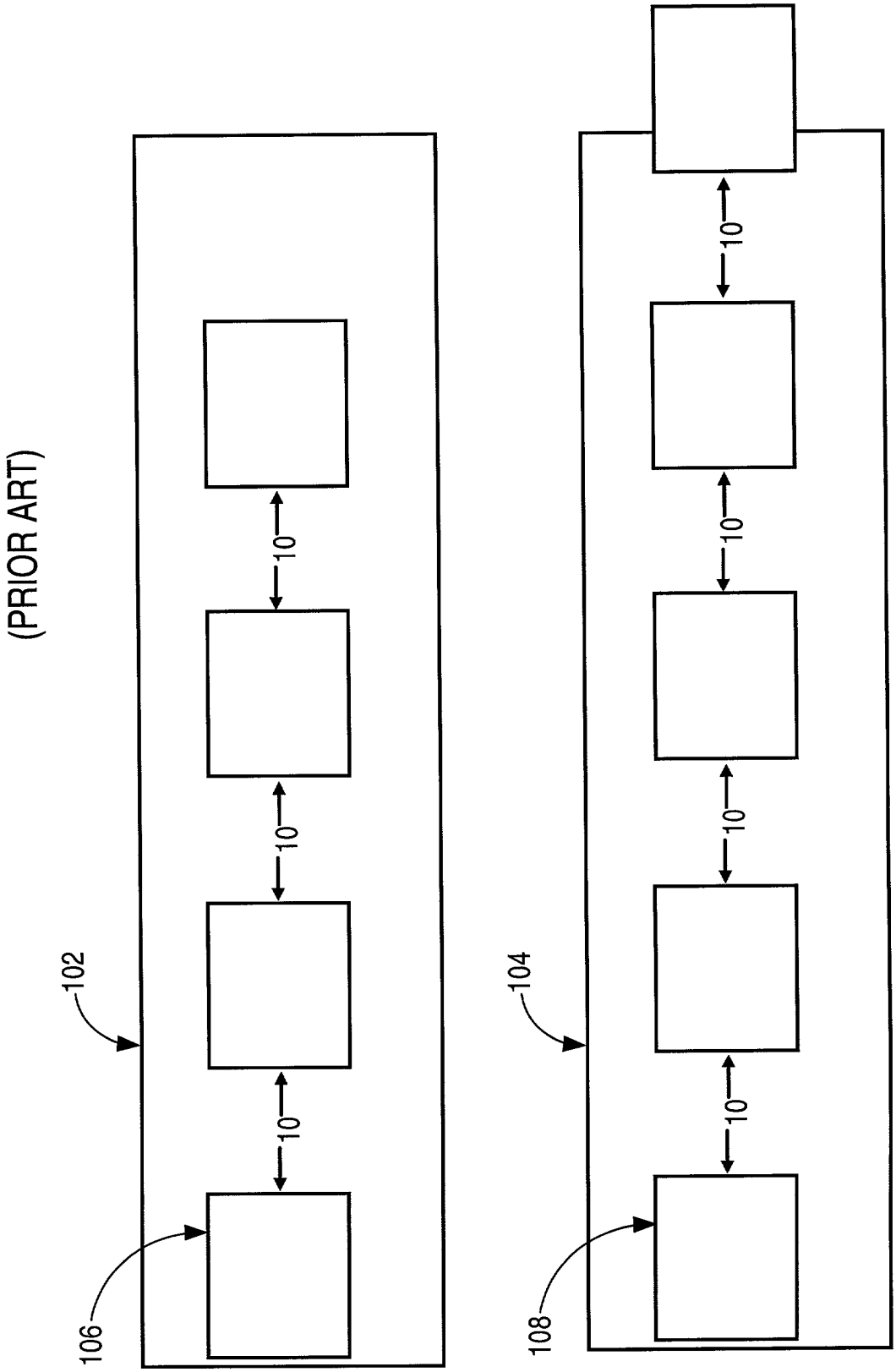


FIG. 1A

(PRIOR ART)

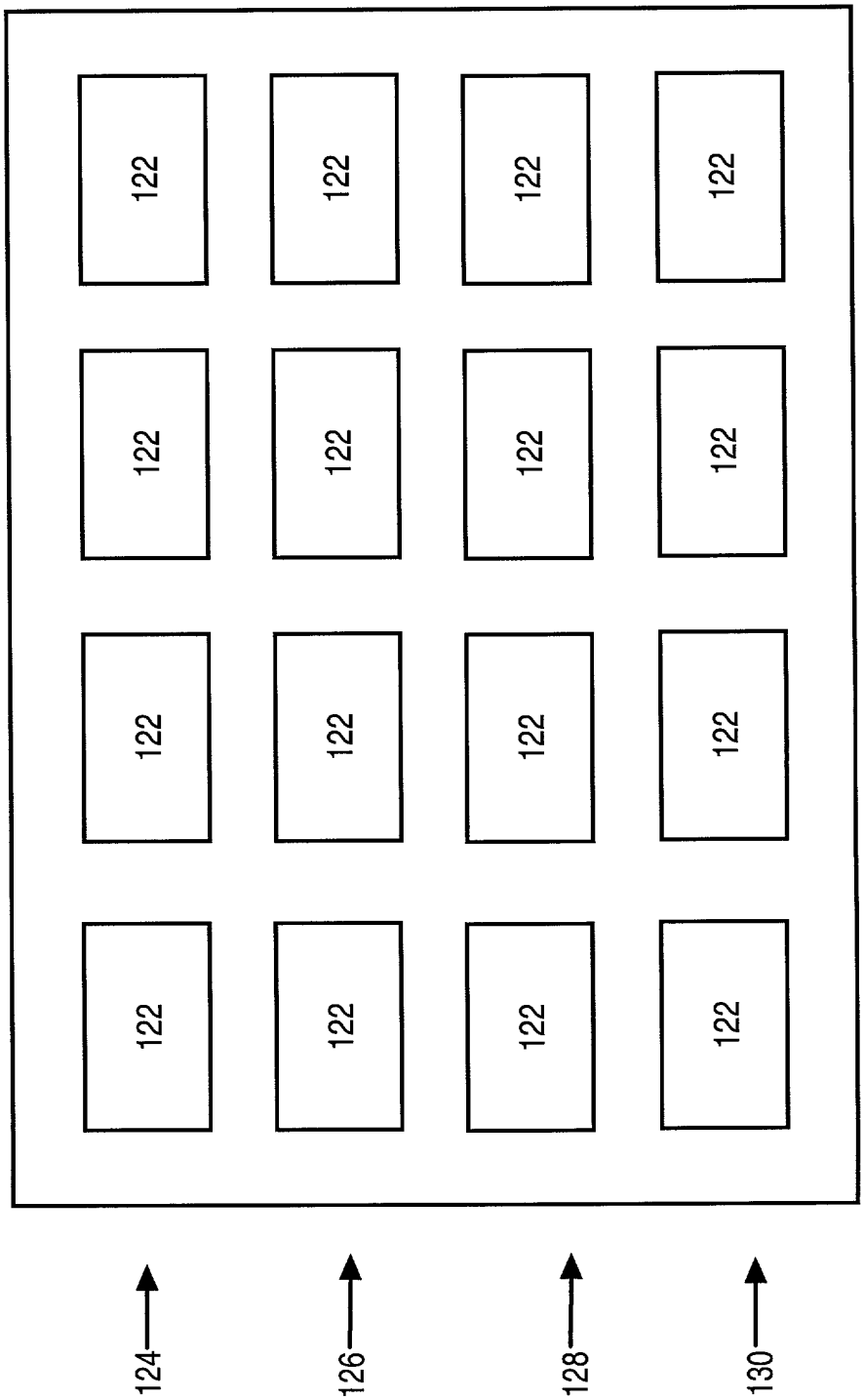


FIG. 1B

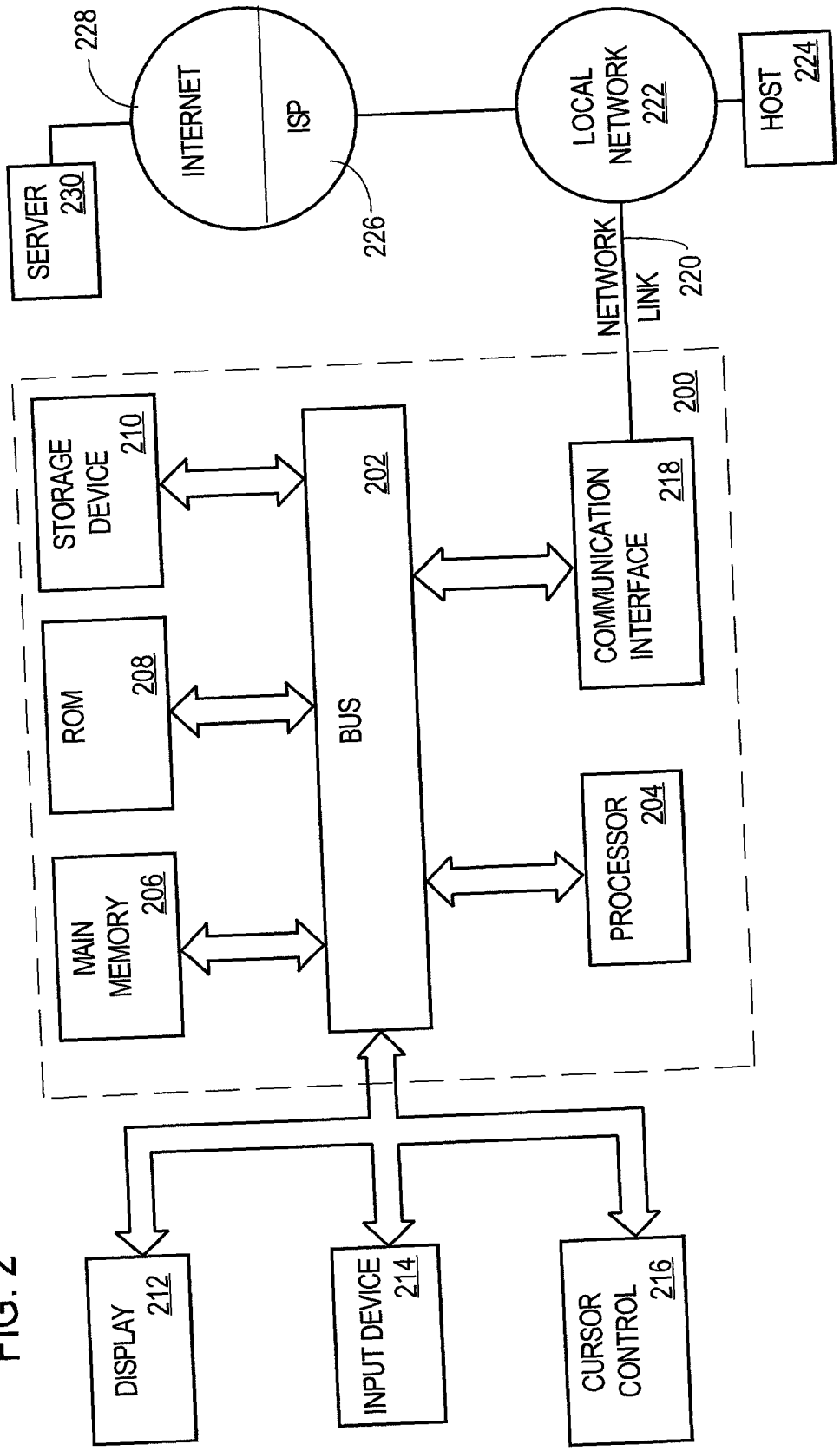

228
INTERNET
ISP
226
LOCAL NETWORK 222
HOST 224
SERVER 230
NETWORK LINK 220
200
STORAGE DEVICE 210
ROM 208
MAIN MEMORY 206
BUS 202
COMMUNICATION INTERFACE 218
PROCESSOR 204
DISPLAY 212
INPUT DEVICE 214
CURSOR CONTROL 216

FIG. 2

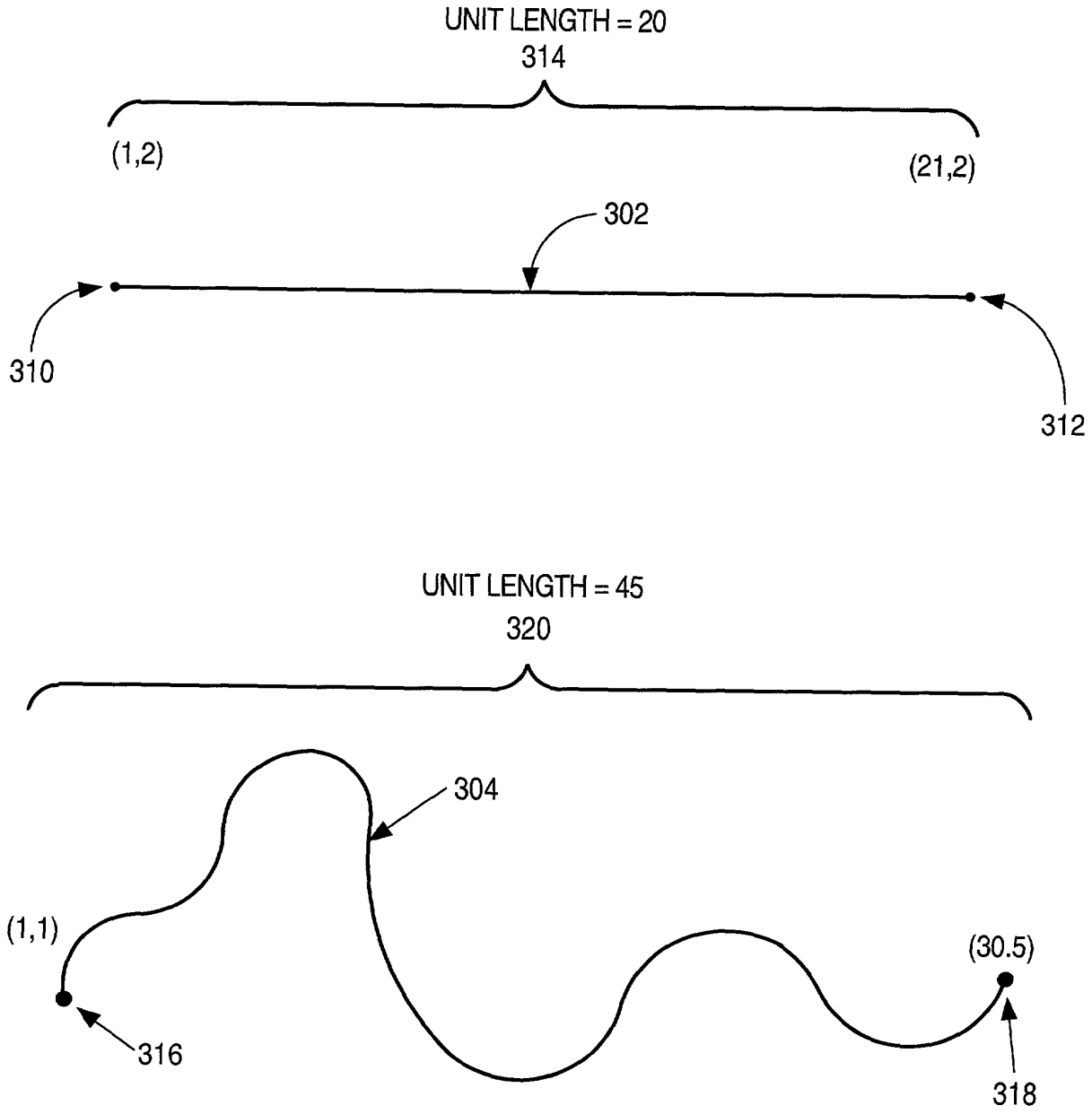
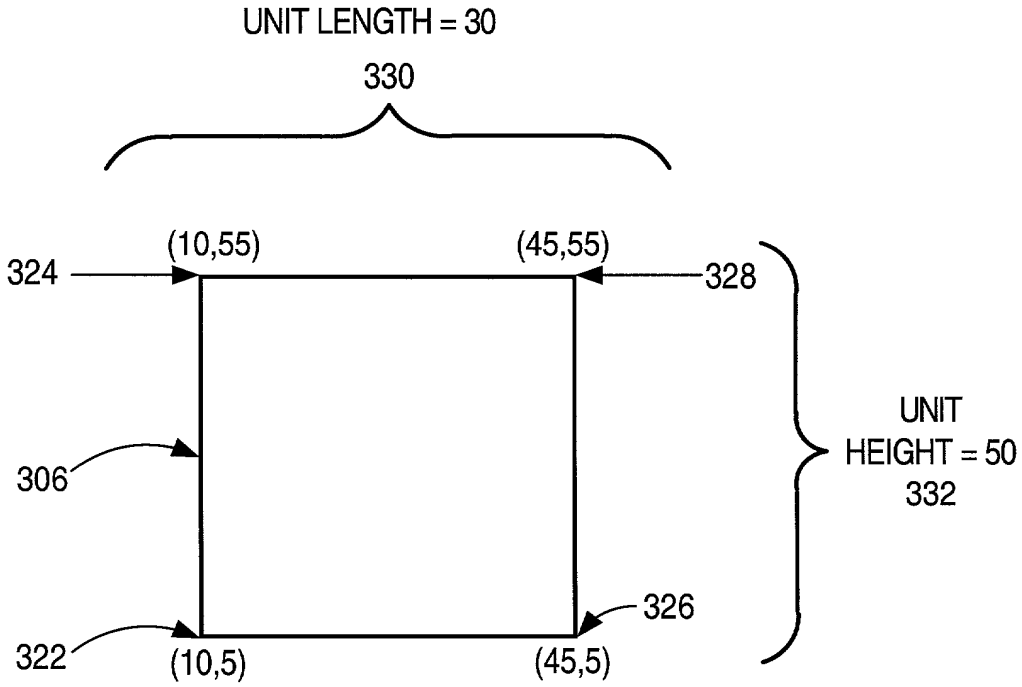

UNIT LENGTH = 20
314
(1,2)
(21,2)
302
310
312
UNIT LENGTH = 45
320
304
(1,1)
(30.5)
316
318

FIG. 3A


UNIT LENGTH = 30
330
(10,55)
(45,55)
324
328
306
UNIT
HEIGHT = 50
332
326
322
(10,5)
(45,5)

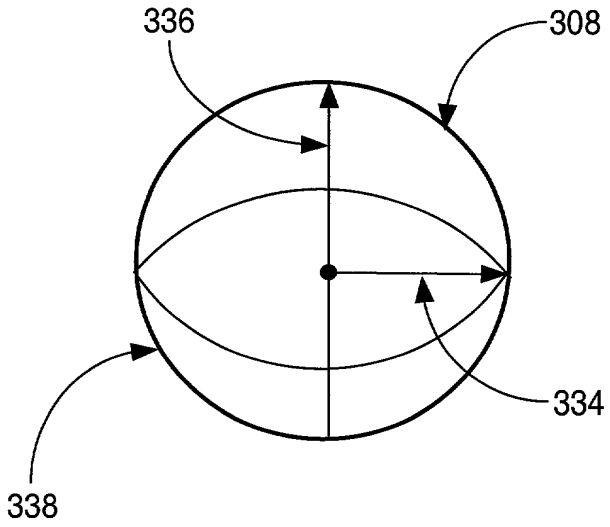

336
308
334
338

FIG. 3B

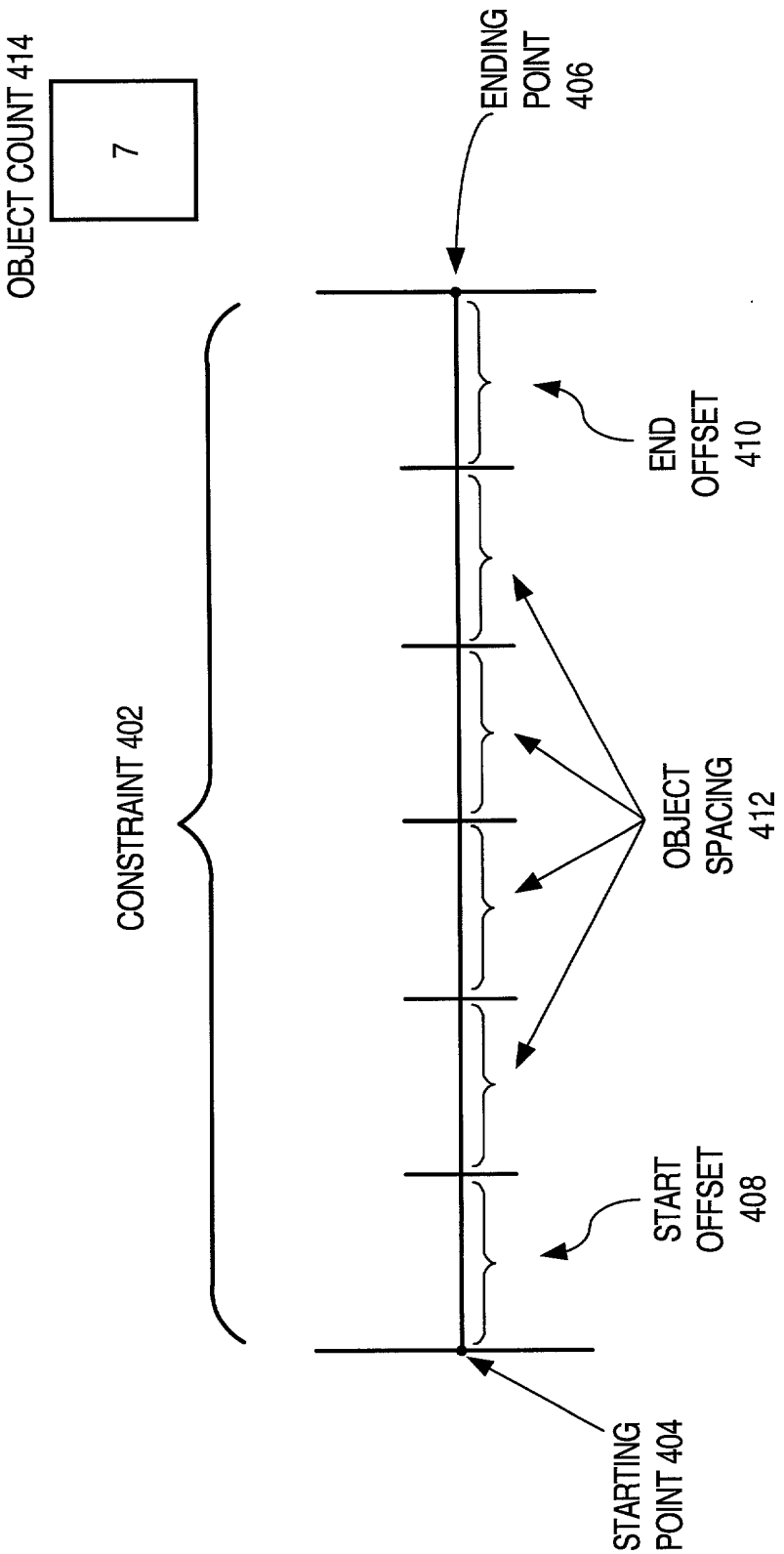

OBJECT COUNT 414
7
ENDING POINT 406
END OFFSET 410
OBJECT SPACING 412
CONSTRAINT 402
START OFFSET 408
STARTING POINT 404

FIG. 4A

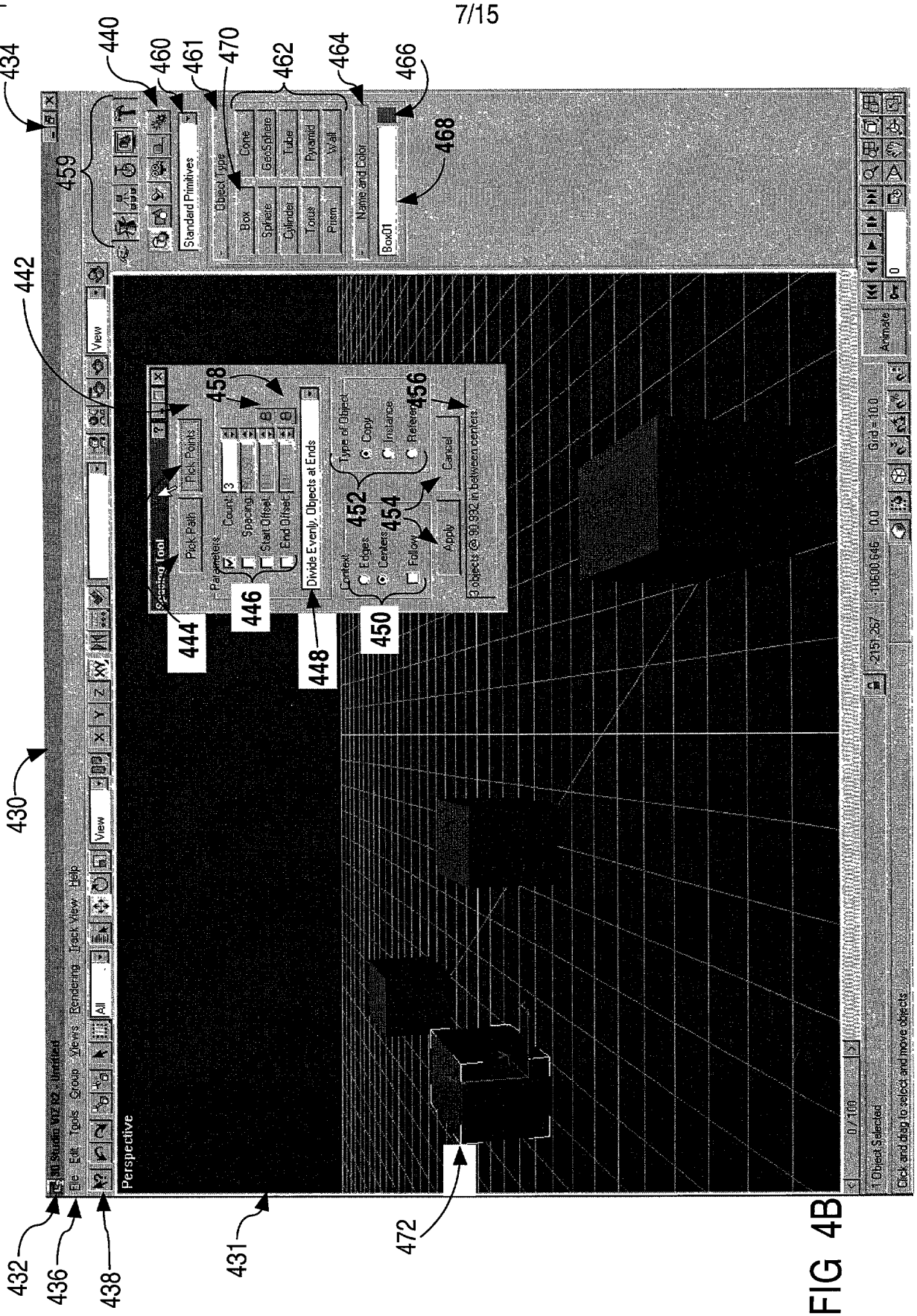

434
440
460
461
470
462
464
466
459
468
442
458
444
446
448
450
452
454
456
430
432
436
438
431
472
Perspective
Spacing Tool
Pick Path
Pick Points
Divide Evenly, Objects at Ends
Standard Primitives
Object Type
Box
Cone
Sphere
GeoSphere
Cylinder
Tube
Torus
Pyramid
Prism
Wall
Name and Color
Box01
Copy
Instance
Relative
Edges
Centers
Follow
Apply
Cancel

FIG 4B

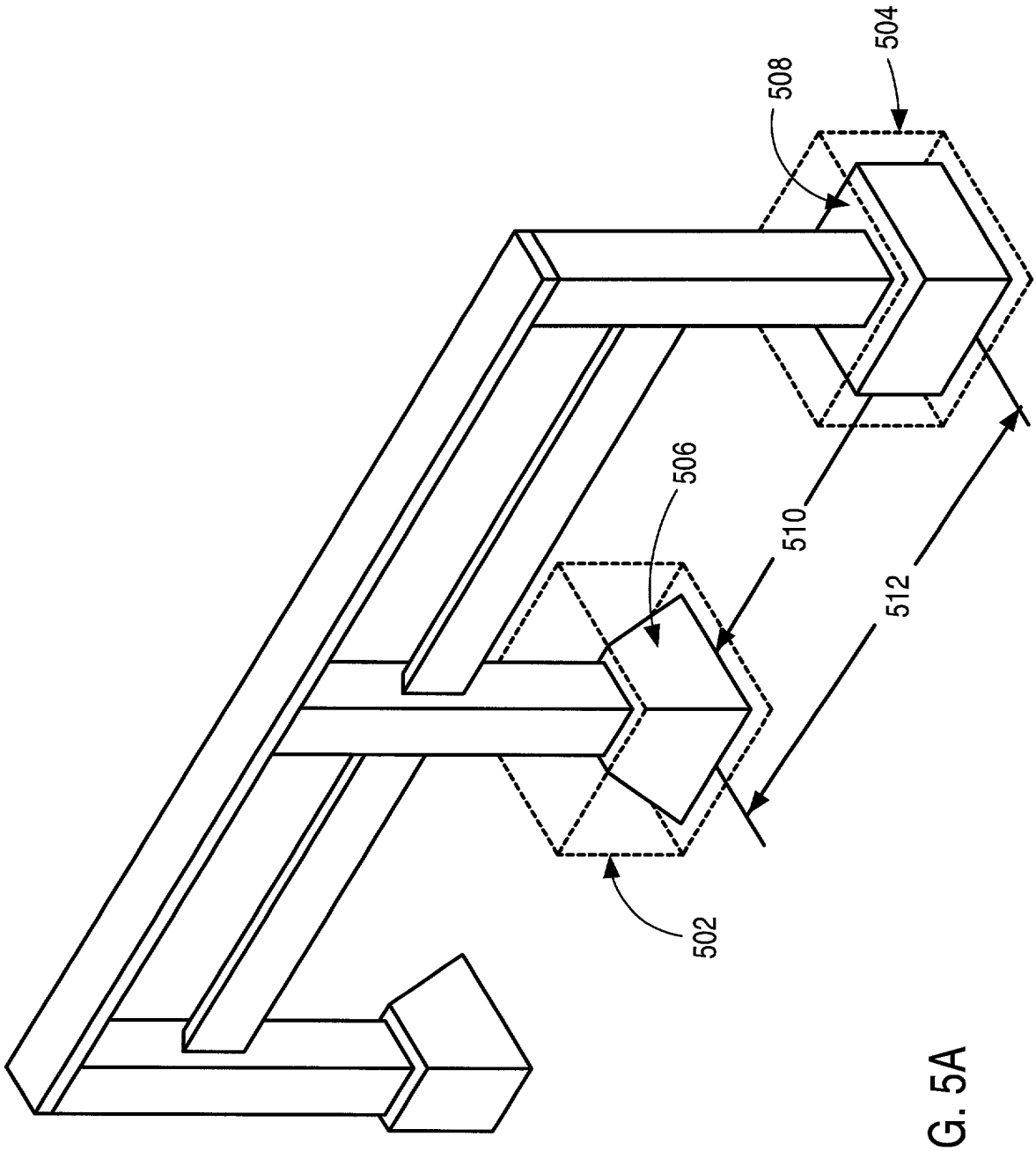


FIG. 5A

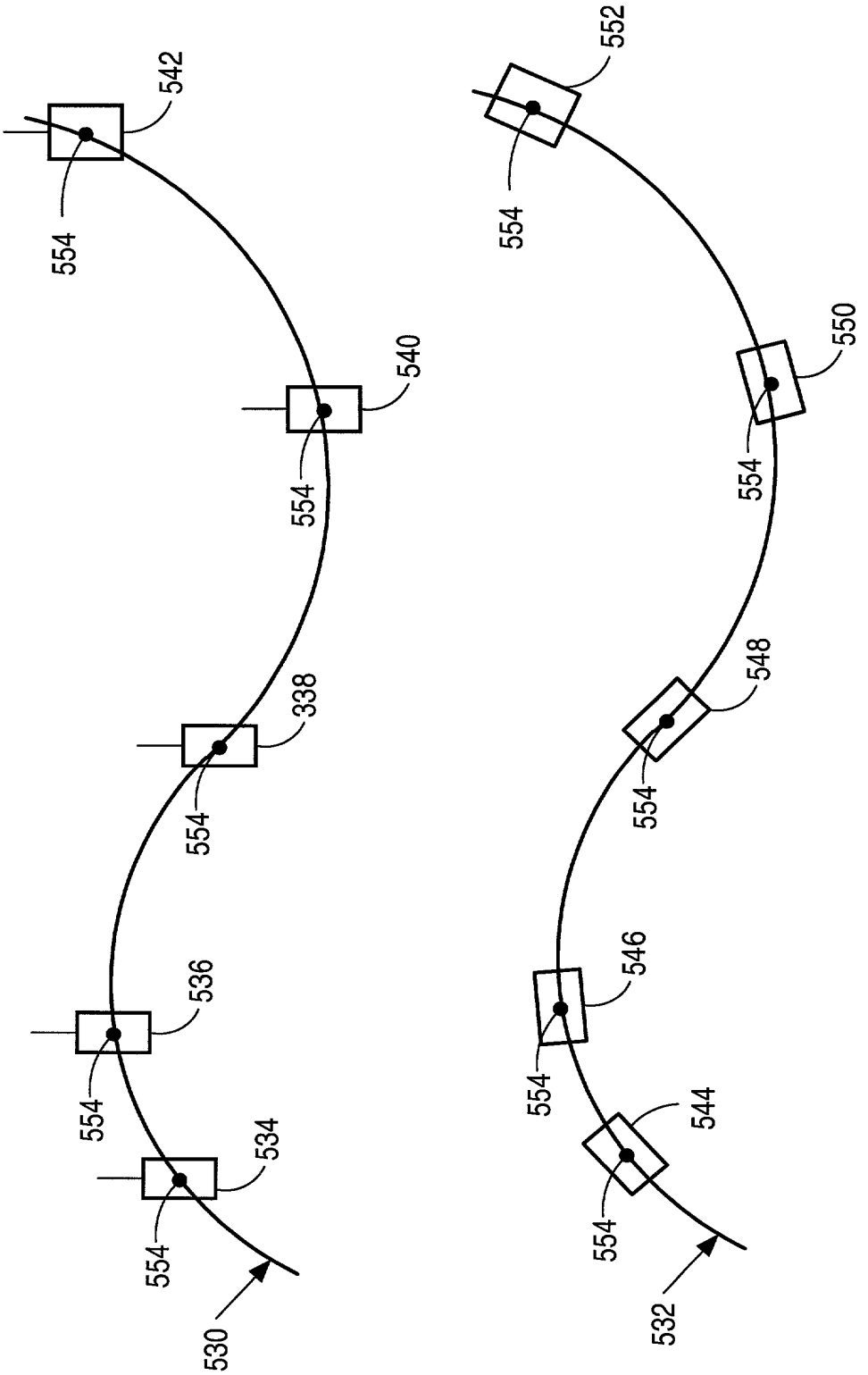
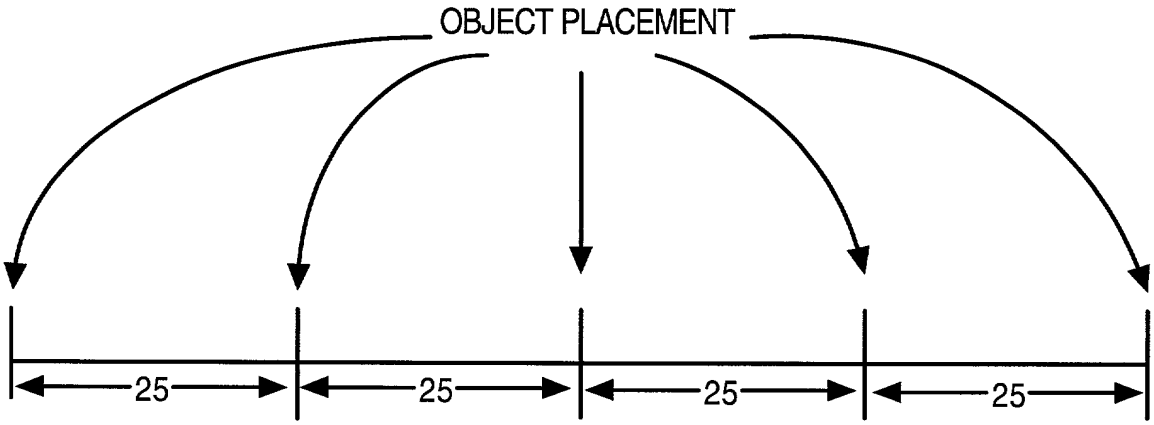

542
554
540
554
338
554
536
554
534
554
530
552
554
550
554
548
554
546
554
544
554
532

FIG. 5B

SUPPLIED SPACING PARAMETERS

OBJECT COUNT = 5
CONSTRAINT LENGHT = 100 UNITS



GENERATED GRID ATTRIBUTE VALUES

START OFFSET = 0 UNITS

END OFFSET = 0 UNITS

SPACING = 25 UNITS

FIG. 5C

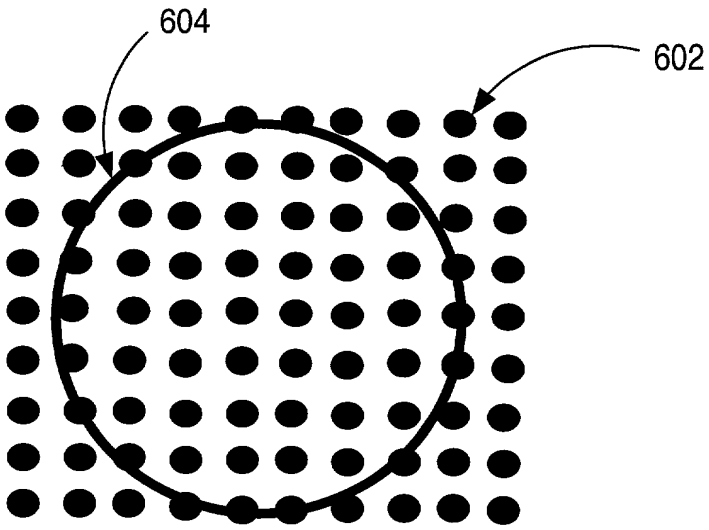


FIG. 6

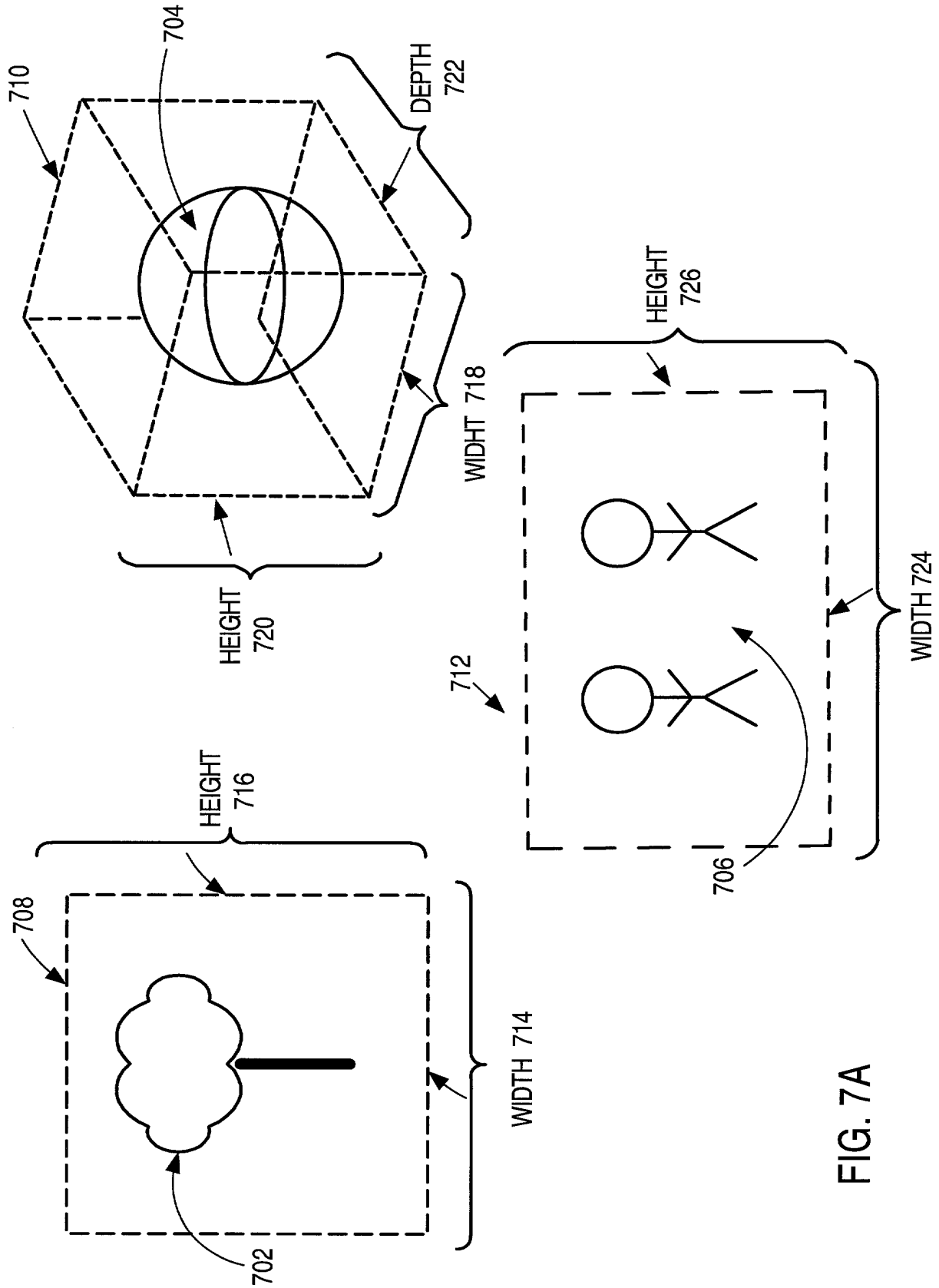

704
710
DEPTH
722
HEIGHT
720
WIDHT 718
HEIGHT
726
712
WIDTH 724
706
HEIGHT
716
708
WIDTH 714
702

FIG. 7A

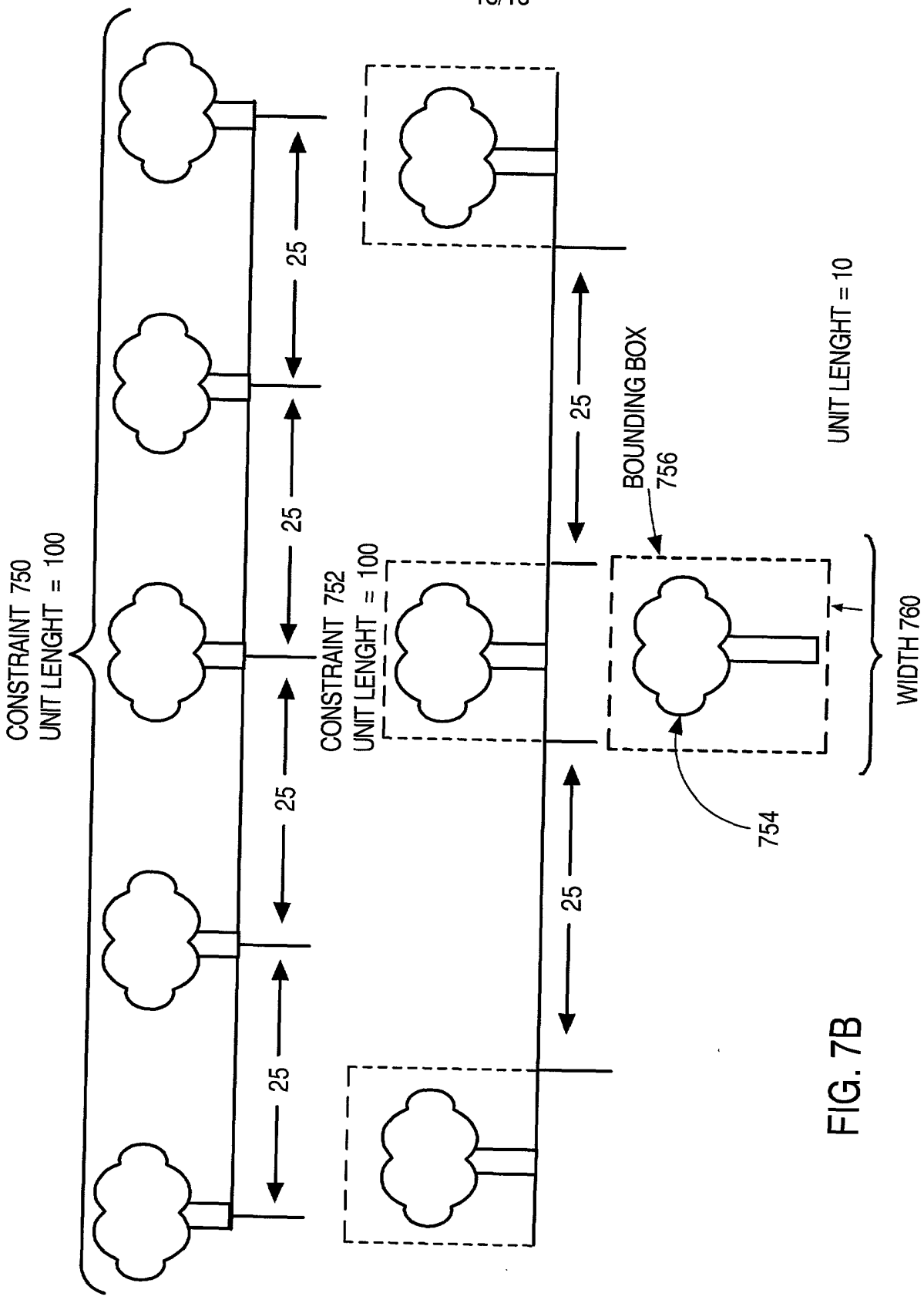

CONSTRAINT 750
UNIT LENGHT = 100
25
25
25
25
25
CONSTRAINT 752
UNIT LENGHT = 100
25
BOUNDING BOX
756
UNIT LENGHT = 10
WIDTH 760
754

FIG. 7B

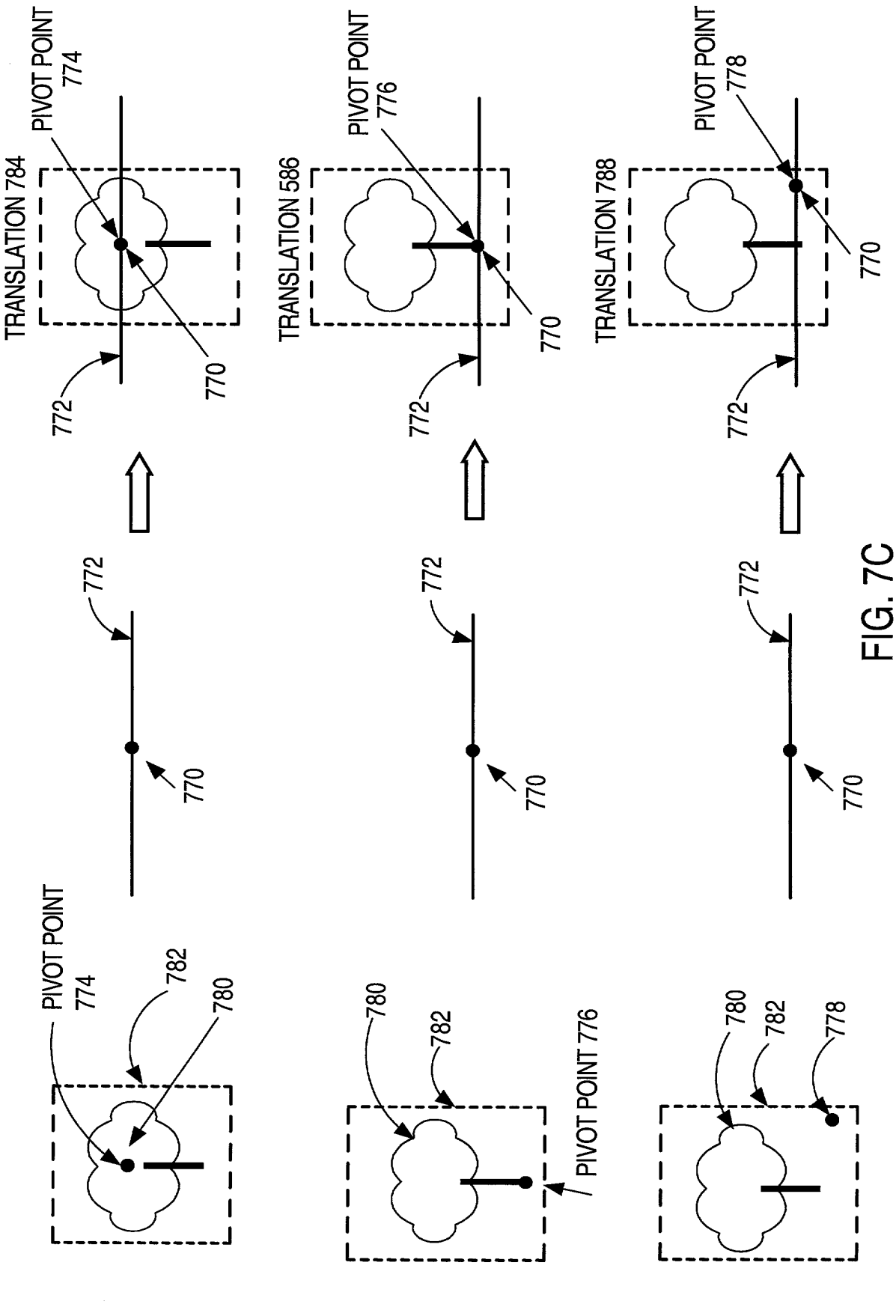

TRANSLATION 784
PIVOT POINT
774
772
770
TRANSLATION 586
PIVOT POINT
776
772
770
TRANSLATION 788
PIVOT POINT
778
772
770
772
770
772
770
772
770
PIVOT POINT
774
782
780
780
782
PIVOT POINT 776
780
782
778

FIG. 7C

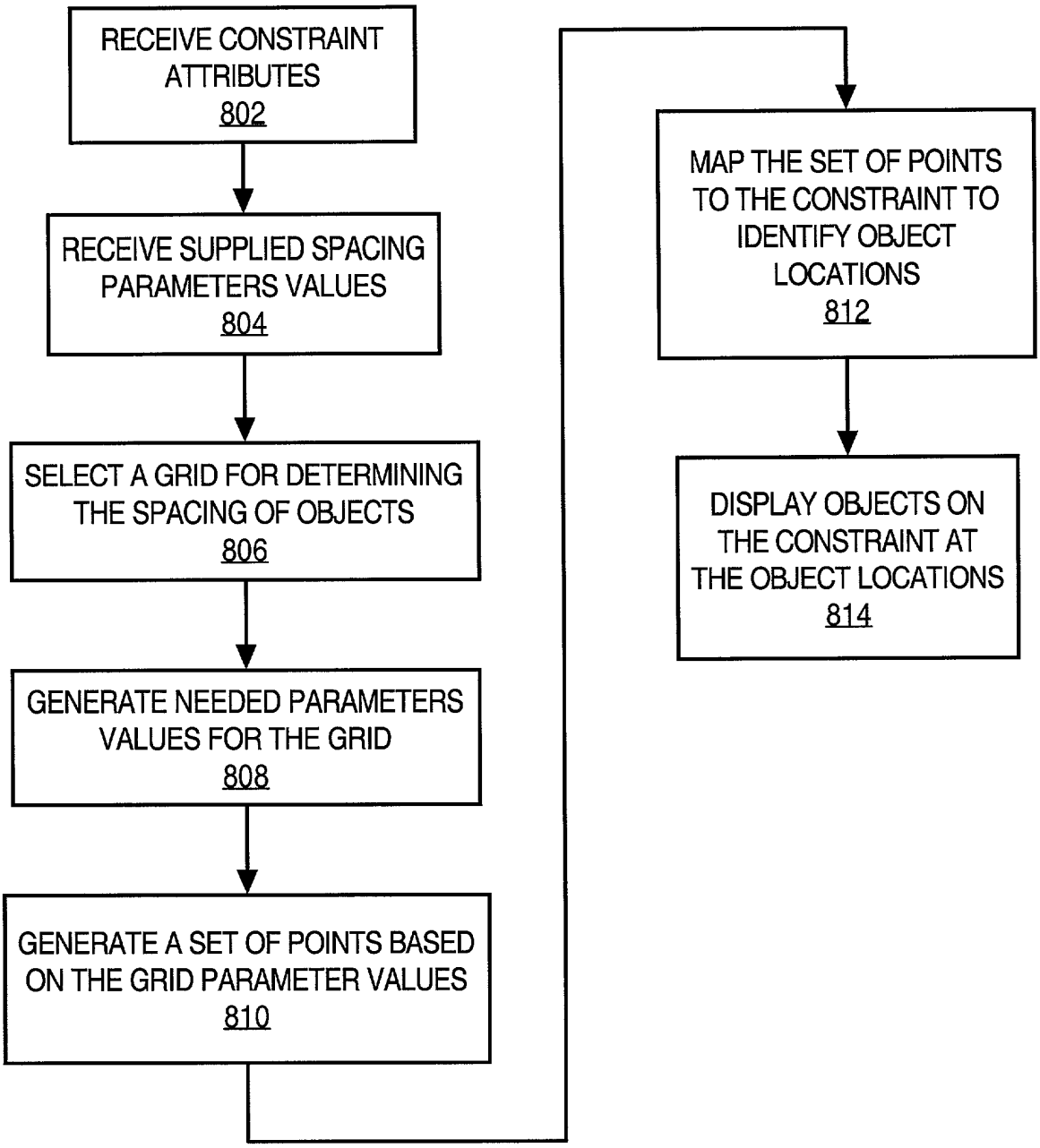

RECEIVE CONSTRAINT ATTRIBUTES
802
RECEIVE SUPPLIED SPACING PARAMETERS VALUES
804
SELECT A GRID FOR DETERMINING THE SPACING OF OBJECTS
806
GENERATE NEEDED PARAMETERS VALUES FOR THE GRID
808
GENERATE A SET OF POINTS BASED ON THE GRID PARAMETER VALUES
810
MAP THE SET OF POINTS TO THE CONSTRAINT TO IDENTIFY OBJECT LOCATIONS
812
DISPLAY OBJECTS ON THE CONSTRAINT AT THE OBJECT LOCATIONS
814

FIG. 8